Call for Applications

14 Scholarships for doctoral candidates

Collaborative Research Training Group program

Perpharmance

Personalized Medicine and Organoid Pharmaceutical Test Mode
Advanced Materials, Analytics, and Computing

UNIVERSITÄT HEIDELBERG ZUKUNFT SEIT 1386

hochschule mannheim

Project KB01
3D vascularized human adipose tissue model containing immune cells

Supervisors
Karen Bieback, Heidelberg University
Rüdiger Rudolf, Mannheim University for Applied Sciences

Project description
Our group has extensive knowledge on adipose-derived stromal cells for cell-based therapies. Extending on this expertise, the aim of this project is to develop a physiological in vitro 3-dimensional (3D) vascularized human adipose tissue model containing immune cells as a tool for (immune) disease modeling. Increasing data indicate that multiple changes in the innate immune system are key contributors to inflammation in obese adipose tissue. Based on cells isolated from the adipose tissue stromal vascular fraction, spheroids, organoids and bioprinted 3D constructs will be established capable of maintaining adipose-resident immune cell subsets. A specific focus will be on enabling the model to study the specific contribution of innate immune cells, e.g. regulatory T cells, innate lymphoid cells and macrophages and to use this to establish novel therapeutic interventions.

Methods used
Primary cell culture, 3D cell culture, bioprinting, flow cytometry, 2D/3D and live cell imaging, optical tissue clearing, AI-assisted image analysis, multiplex analysis, single cell analyses, lipidomis/metabolomics

Applicants profile
The successful candidate holds a Master degree in biosciences, biotechnology, or similar and has a strong interest in cell biology and immunology. Sound work ethics and the will to drive the project in a cooperative team effort are mandatory. Experience with adipose tissue, stem/stromal, endothelial and immune cell culture in 2D and 3D, flow cytometry, confocal microscopy, advanced image analysis, and a propensity for technological solutions, including 3D-(bio) printing are an asset.

Provision
Scholarships are comprised of a monthly stipend of € 1,500. The scholarships are awarded for up to three years, commencing as of March 2023.

https://www.umm.uni-heidelberg.de/perpharmance/

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**Personalized Medicine and Organoid Pharmaceutical Test Models:
Advanced Materials, Analytics, and Computing**

In the framework of a cooperative research training group program (Kooperatives Promotionskolleg) between Heidelberg University and Mannheim University of Applied Sciences, Heidelberg University is accepting applications for scholarships to pursue a doctorate in Natural Sciences, Mathematics, Engineering Sciences, or Informatics. The scholarships are granted by the Land Baden-Württemberg, Heidelberg University and Konanz Foundation.

Provisions
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Applicant´s profile
We seek reliable, highly motivated applicants with a spirit for teamwork in an interdisciplinary and international research environment.
To be eligible for a scholarship, applicants
- have completed their master´s (or equivalent) in the areas of medical sciences, natural sciences, engineering sciences, mathematics, or informatics with an above-average grade,
- have a strong command of the theories and methods relevant for their project proposal,
- have a strong command of English,
- ideally have experience in the pertinent research contexts (e.g., research stays, internships within research groups, student/graduate assistant, etc.).

Application documents and procedure
To apply for one of these scholarships, please submit the following documents in one single pdf document, referring to one or more of the available projects (see https://www.umm.uni-heidelberg.de/perpharmance/projects/), via e-mail to perpharmance@medma.uni-heidelberg.de
Extended Deadline: February 28, 2023.
- Curriculum vitae,
- Motivation letter (max 1.5 pages, explaining the specific motivation for your application referring to your thematic areas of interest and specifying your scientific background, previous experience),
- University degrees (bachelor´s, master´s, etc.),
- Proof of English (if not a native speaker),
- Two recommendation letters (written by faculty or industrial academic supervisors).

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c/o R Rudolf

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